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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN, DUNG X

ART UNIT PAPER NUMBER

2631

DATE MAILED: 09/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/147,230

Applicant(s)

OLSSON ET AL.

Examiner

Dung X Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 30 - 58 is/are pending in the application.
- 4a) Of the above claim(s) 43 - 57 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 31 - 38 is/are allowed.
- 6) ☒ Claim(s) 30, 39 - 42, and 58 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 43 - 57 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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*Response to Arguments with traverse*

1. Applicant's election with traverse of claims 30 – 42 and 58 in Paper No. 15 is acknowledged. The traversal is on the ground(s) that the search and examination of the entire application can be made without serious burden. This is not found persuasive because claims 30 - 42, and 58 drawn to a receiver, particularly uses the synchronizing the sampling time of data, classified in class 375, subclass 355, while claims 43 - 57, drawn to a transmitter of an OFDM transmission system, classified in class 375, subclass 295.

The requirement is still deemed proper and is therefore made FINAL.

*Drawings*

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the sampling oscillator must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

*Specification*

3. The amendment filed on 06 March 2002 to claims 39 and 40 introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

Ok The parameter  $Y_{n,k}$  is not shown and supported by the original disclosure. as filed

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4. This application is a 371 of PCT international application filed on 27 February 1998, that information must be stated at the beginning of the specification. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

*The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.*

6. **Claims 39 and 40 are rejected** under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding to claims 39 and 40, the parameter  $Y_{n,k}$  is not shown and supported by the original disclosure.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless –*

*(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an*

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*international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.*

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. **Claims 30, 41, 42, and 58 are rejected** under 35 U.S.C. 102(e) as being anticipated by Schmidl et al. (US S/N 5,732,113).

Regarding claim 30, Schmidl et al. teaches:

- A sampling oscillator (column 2, lines 55-56 and column 3, line 49);
- Control circuit 77 of figure 3 for controlling said sampling oscillator (column 3, lines 48-49) and comprising estimation means for estimating timing deviations of said sampling oscillator (column 9, line 37 and 8);
- Said estimation means operating entirely on frequency domain input data (column 9, lines 31-32).

Regarding claim 41, Schmidl et al. also discloses that during signal acquisition, frame timing is adjusted until received frames are sampled within a signal interval (column 9, lines 6 – 17).

Regarding claim 42, Schmidl et al. also further discloses means responsive to a feedback control for said sampling oscillator to adjust the frame timing so that the frame synchronization is maintained (column 17, lines 36 – 39 and column 9, lines 57 – 60).

Regarding claim 58, Schmidl et al. shows (figures 1 and 3):

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- DSP 18 adds a cyclic prefix, which a repetition of part of the symbol (column 2, lines 40 – 47);
- A sampling oscillator (column 2, lines 55-56 and column 3, line 49);
- Control circuit 77 of figure 3 for controlling said sampling oscillator (column 3, lines 48-49) and comprising estimation means for estimating for estimating timing deviations of said sampling oscillator (column 9, line 37 and 8);
- Said estimation means operating entirely on frequency domain input data (column 9, lines 31-32).

***Allowable Subject Matter***

9. **Claims 31 – 38 are allowed.** The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 31, the prior art of record fails to show or render obvious of a receiver, for use in an OFDM transmission system in which data is transmitted in frames, each frame having a cyclic prefix, which is a repetition of part of the frame, comprising:

A sampling oscillator;

An adaptive equalizer having an equalizer inverse channel model;

Separation means for separating the equalizer inverse channel model into a first and a second part, the first part being independent of sample timing and the second part being dependent on sample timing; and

Control means for controlling the sampling oscillator based upon the second part.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Johnson et al. (US S/N 5,909,463) discloses a single-chip software configurable transceiver for asymmetric communication system.

Isaksson. (US S/N 5,726,973) discloses a method and its corresponding arrangement for synchronization in OFDM modulation.

Cioffi (US S/N 5,625,651) discloses a discrete multi-tone data transmission system using an overhead bus for synchronizing multiple remote units.

Chow et al. (US S/N 5,479,447) discloses a method and its corresponding apparatus for adaptive, variable bandwidth, high-speed data transmission of a multi-carrier signal over digital subscriber lines.

***Contact Information***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung X. Nguyen whose telephone number is (703) 305-4892. The examiner can normally be reached on Monday through Friday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Chi Pham can be reached on (703) 308-4378. The fax phone numbers for this group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.

DXN

September 18, 2002

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DON N. VO  
PRIMARY EXAMINER